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ELECTRON-PROTON SPECTROMETER
QUALITY ASSURANCE PROCEDURES
FOR
EQUIPMENT AND PARTS

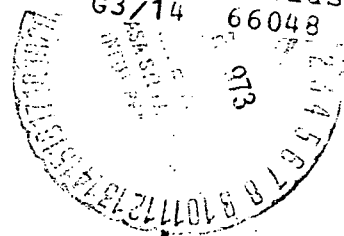
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QUALITY ASSURANCE PROCEDURES

FOR

EQUIPMENT AND PARTS

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1. INTRODUCTION

The purpose of the "Quality Assurance Procedures for Equipment and Parts" procedure is to establish guidelines and procedures for Lockheed Electronics Company (LEC) and NASA/MSC personnel who are concerned with receiving, storage, transfer, inspection and use of flight or mission related hardware within LEC on the Electron/Proton Spectrometer (EPS) Program. While general guidelines, designed to cover all situations, exist (see MSC "Manned Spacecraft Center Reliability and Quality Assurance Manual", MSCM 5312) this document provides guidelines and procedures specifically designed to supplement the QA activity on the EPS Program. It is the purpose of this document to insure that all equipment, parts and other hardware received and/or used in the EPS program meet or surpass the standards and requirements established by cognizant authorities.

2. ADMINISTRATION

2.1 Scope

The procedures in this document are restricted primarily to the quality aspects of receiving, storage, transfer, inspection, usage, and delivery of flight-oriented items.

2.2 Issuance and Maintenance

The LEC Quality Assurance and Reliability Engineer has the responsibility of the issuance, maintenance and revision of "Quality Assurance Procedures for Equipment and Parts", with the approval of the Program Manager. Adherence to the guidelines in this document shall become effective the date of official approval.

2.3 MSC Inspection

All drawings, procedures, and specifications used on the EPS Program will be reviewed by MSC Quality Assurance Organization before work begins. The assigned Q. C. Representative or his alternate will monitor all tests, inspect each module, subassembly, and assembly to ensure conformance to released drawings, procedures and specifications.

2.4 Test Preparation Sheets

All work will be authorized and documented by Test Preparation Sheet (TPS) and modification sheets where applicable. TPS's will be signed by Contractor Representatives. All TPS's and mod sheets will be reviewed by the assigned Q. C. Representative or his alternate prior to start of work. The review will be designated by MSC Q. C. conformance stamp and date in block number 18 of the TPS. All worked steps of the TPS will be initialed and dated or stamped and dated (block 21) by the person performing the work. Final acceptance and close out of work will be stamped and dated by the assigned Q. C. Representative or his alternate.

3. RECEIVING AND STORAGE OF FLIGHT ITEMS

Each component, subassembly, and completed assembly to be utilized in flight hardware shall be received, processed and stored according to the following procedure.

3.1 Visual Inspection

Incoming components, subassemblies, and completed assemblies will be checked for shipping damage, proper identification, and count as specified on the purchase order. Unacceptable items or shipments from vendors will be returned to the vendor for replacement.

3.2 Card File Log

The receipt of all acceptable flight items by LEC shall be entered in a card file log. Each card shall contain all applicable information listed below.

- Part name
- Part number
- Value, Serial No.
- Manufacturer
- Quantity ordered
- Quantity received
- Lot number-Date Code
- Date ordered
- Purchase request number
- Purchase order number
- Date order received
- Location
- Certification of Compliance status

3.3 Quality Assurance Data File

All relevant quality assurance and reliability inspection data for a particular item or group of items received prior to withdrawal for use will be filed in a Q. A. Data File. This material will be filed by manufacturer with the following subordination:

Manufacturer

Purchase Order Number

Line item on P. O.

Partial shipment as received

At the time of release from the controlled access area one copy of the releasing document will be inserted in this file under Releasing Documents. These records shall be retained for the duration of the program and then turned over to the cognizant NASA engineer.

3.4 Controlled Storage

A controlled storage area with limited access (referred to in LEC as bonded stores) will be located in the immediate vicinity of the fabrication area. All parts, subassemblies, and complete assemblies to be used in qualification or flight units will be stored in this area.

4. RELEASE OF FLIGHT ITEMS

4.1 Documents for Release

Flight or mission related items will be released from the controlled storage area on receipt of one or more of the following documents, properly executed:

Test Preparation Sheet (TPS (MSC Form 1225)

Discrepancy Report (DR)

Failure Investigation Action Report (FIAR)

Material Review Record (MRR)

All TPS, DR, FIAR, and MRR number will be issued and controlled by Lockheed. One copy of the form (s) (TPS, DR, FIAR or MRR) shall be retained in the Q. A. Data file.

4.2 Card File Log

The release of the item(s) shall be entered into the card file log. Each item released by the TPS or other release document, shall be entered on the appropriate card and shall include quantity issued, person issued to, serial number(s) (if applicable), date issued, circuit to be used in, TPS number, and balance on hand.

4.3 Acceptance Data Pack

All Quality Control records originated after original removal of components from the controlled access storage shall be accumulated in an Acceptance Data Pack which will travel with the hardware and will be delivered with each Hardware End Item. The data packs for the various

subassemblies, and assemblies shall be combined as the hardware is assembled. However, care will be taken to ensure that the data pack for a particular subassembly or assembly does not lose its identity. This will be accomplished by assigning a part number and serial number to each module, subassembly, and assembly.